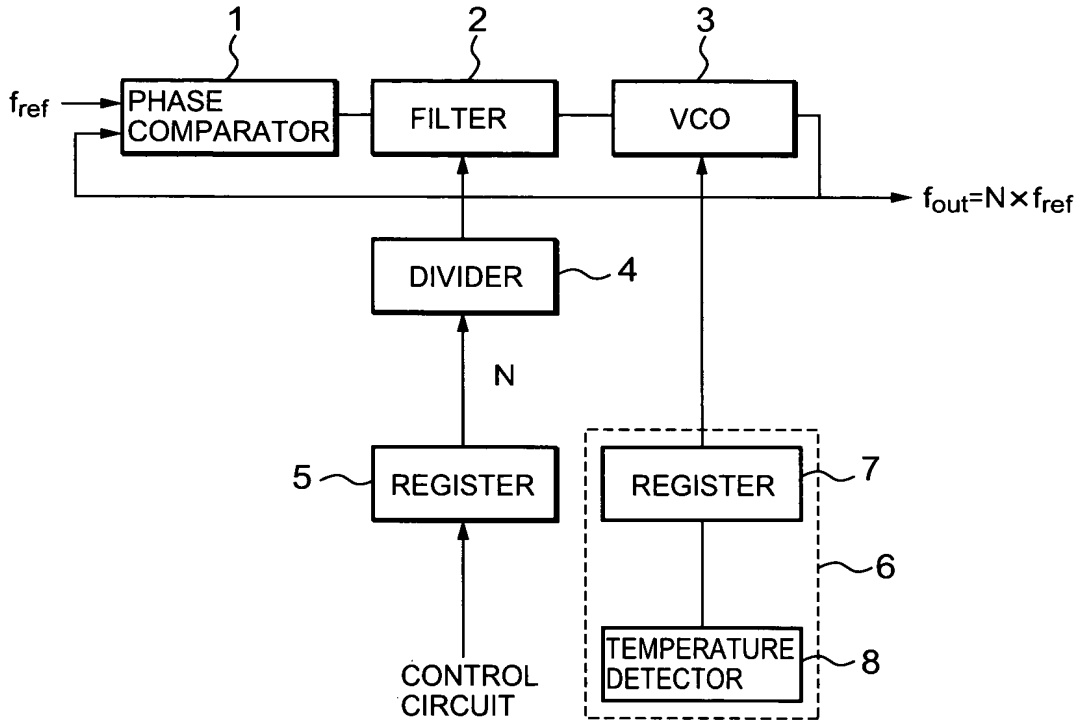
1
2
3
f_{ref}
PHASE COMPARATOR
FILTER
VCO
$f_{out}=N\times f_{ref}$
DIVIDER
4
N
5
REGISTER
REGISTER
7
6
TEMPERATURE DETECTOR
8
CONTROL CIRCUIT

Fig. 1

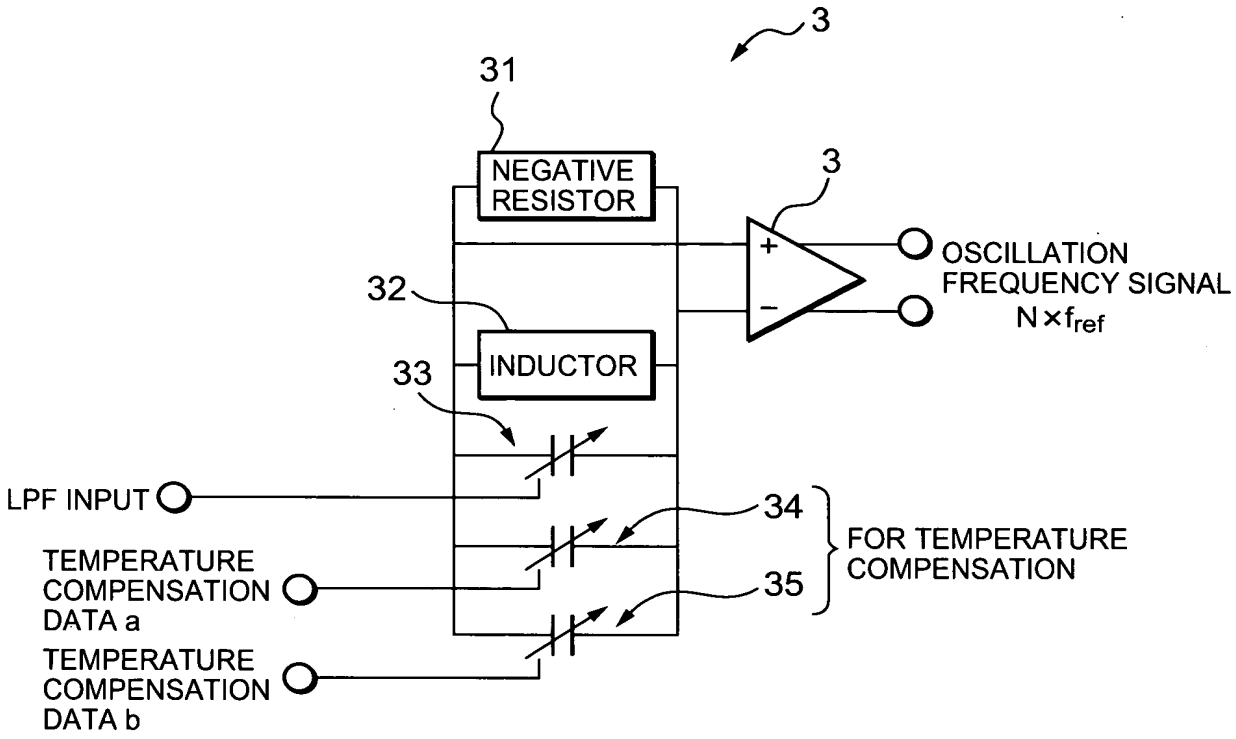
3
31
NEGATIVE RESISTOR
3
+
−
OSCILLATION FREQUENCY SIGNAL
N×fref
32
INDUCTOR
33
LPF INPUT
34
FOR TEMPERATURE COMPENSATION
TEMPERATURE COMPENSATION DATA a
35
TEMPERATURE COMPENSATION DATA b

Fig. 2

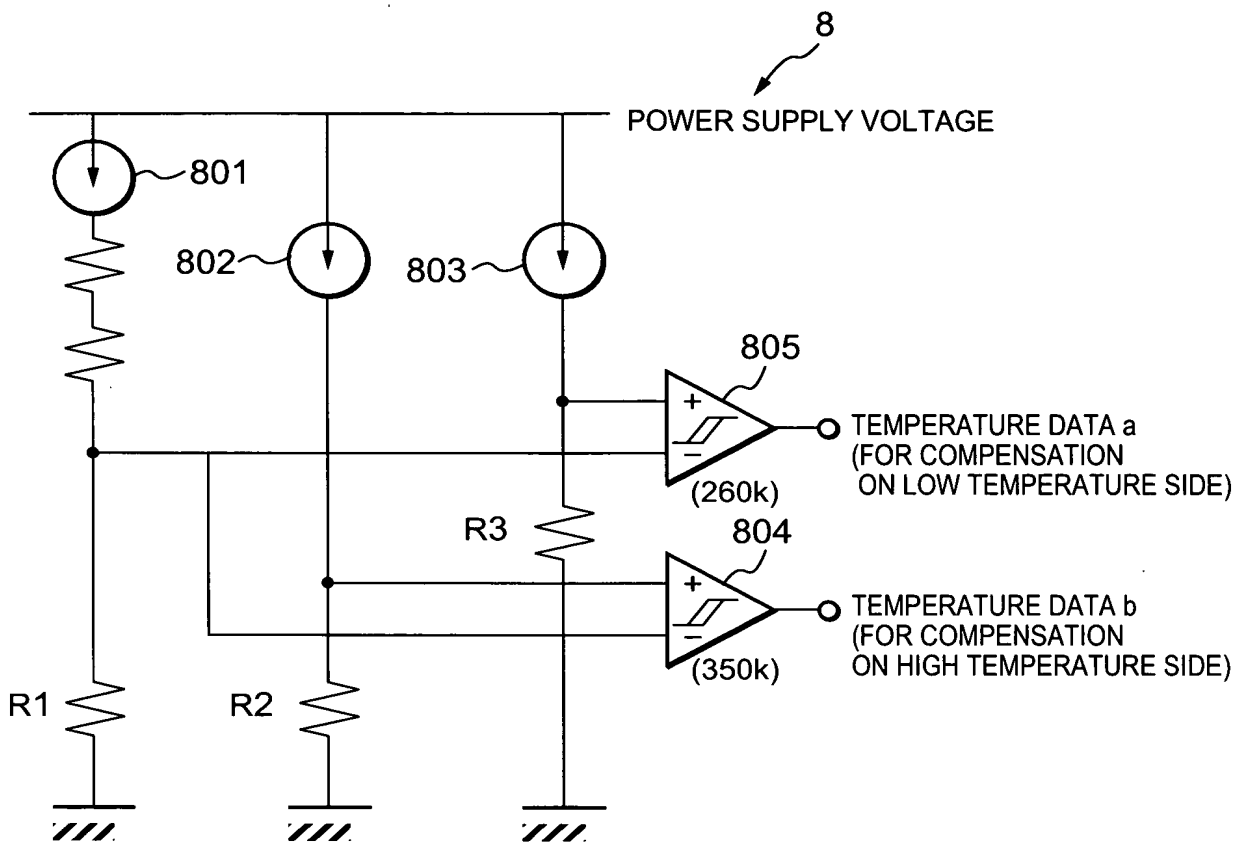
8
POWER SUPPLY VOLTAGE
801
802
803
805
TEMPERATURE DATA a
(FOR COMPENSATION
ON LOW TEMPERATURE SIDE)
(260k)
R3
804
TEMPERATURE DATA b
(FOR COMPENSATION
ON HIGH TEMPERATURE SIDE)
(350k)
R1
R2

Fig. 3(a)

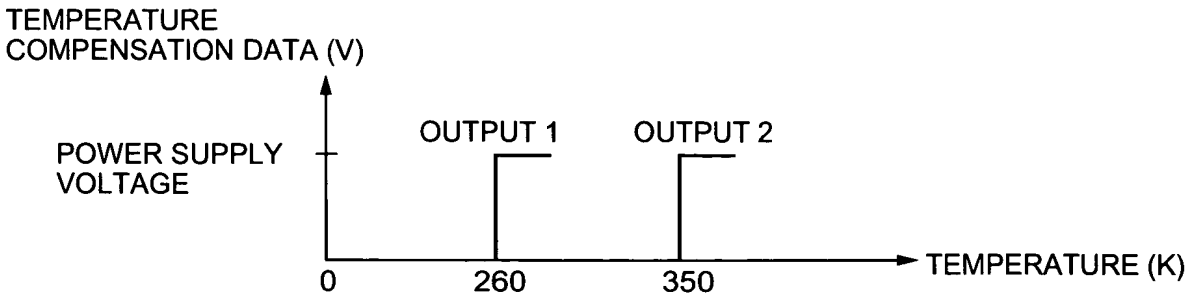
TEMPERATURE
COMPENSATION DATA (V)
POWER SUPPLY
VOLTAGE
OUTPUT 1
OUTPUT 2
0
260
350
TEMPERATURE (K)

Fig. 3(b)

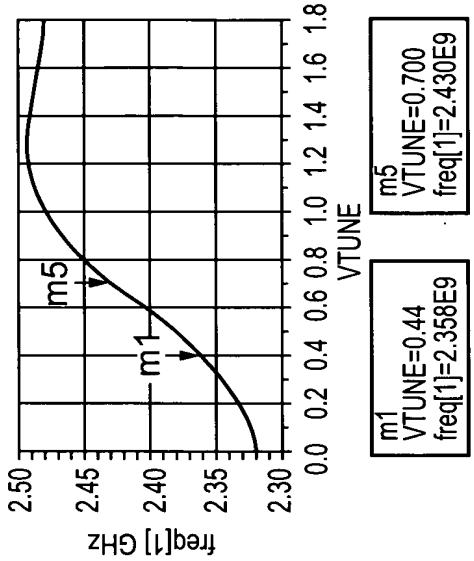

Fig. 4(a)

Fig. 4(c)

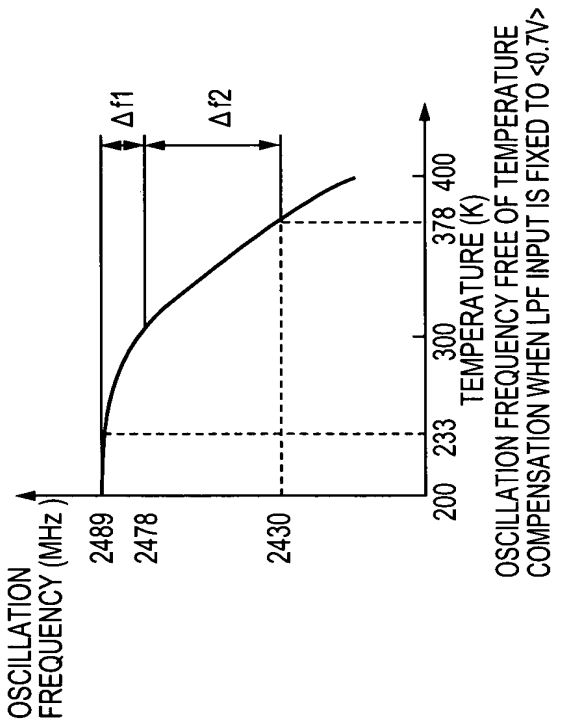

Fig. 4(d)

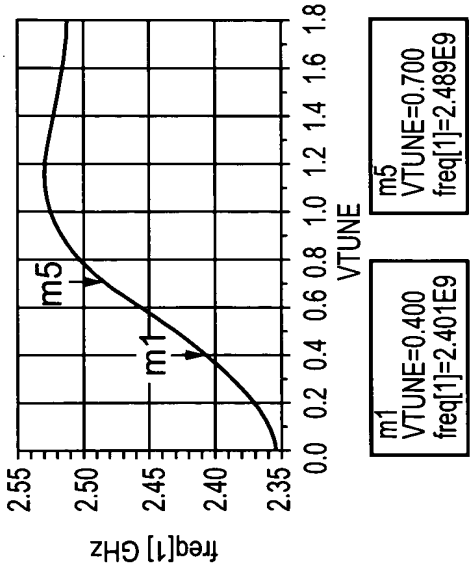

Fig. 4(b)

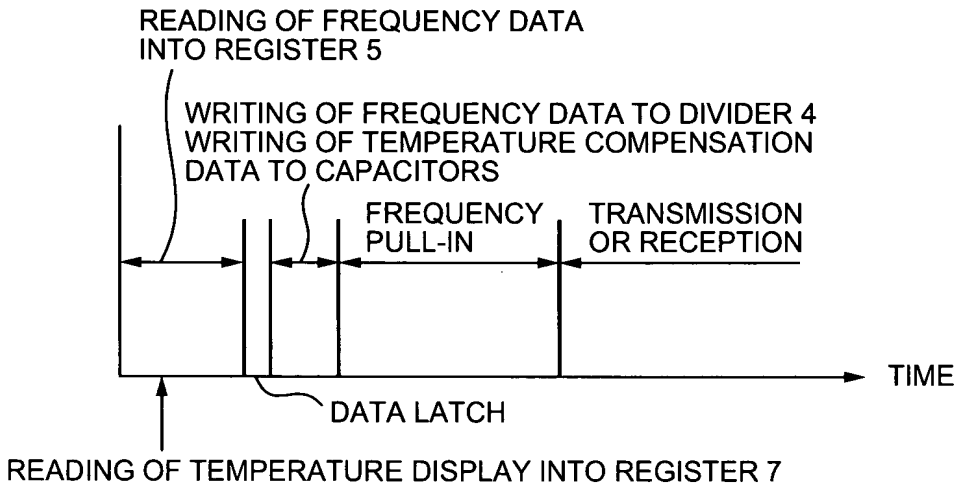
READING OF FREQUENCY DATA
INTO REGISTER 5
WRITING OF FREQUENCY DATA TO DIVIDER 4
WRITING OF TEMPERATURE COMPENSATION
DATA TO CAPACITORS
FREQUENCY
PULL-IN
TRANSMISSION
OR RECEPTION
TIME
DATA LATCH
READING OF TEMPERATURE DISPLAY INTO REGISTER 7

Fig. 5(a)

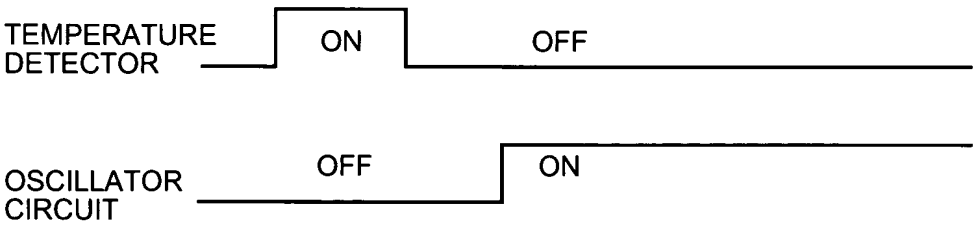
TEMPERATURE
DETECTOR
ON
OFF
OSCILLATOR
CIRCUIT
OFF
ON

Fig. 5(b)

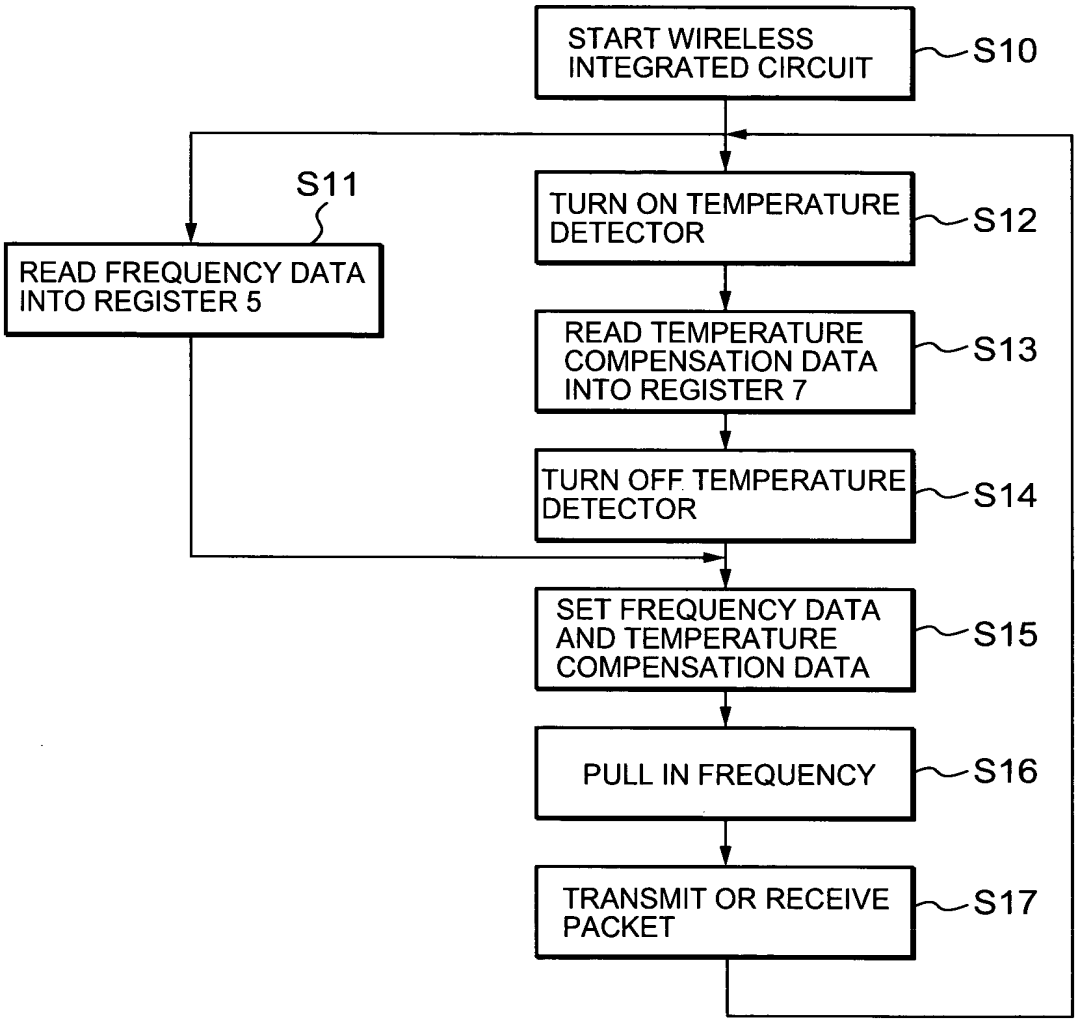
START WIRELESS INTEGRATED CIRCUIT
S10
S11
READ FREQUENCY DATA INTO REGISTER 5
TURN ON TEMPERATURE DETECTOR
S12
READ TEMPERATURE COMPENSATION DATA INTO REGISTER 7
S13
TURN OFF TEMPERATURE DETECTOR
S14
SET FREQUENCY DATA AND TEMPERATURE COMPENSATION DATA
S15
PULL IN FREQUENCY
S16
TRANSMIT OR RECEIVE PACKET
S17

Fig. 6

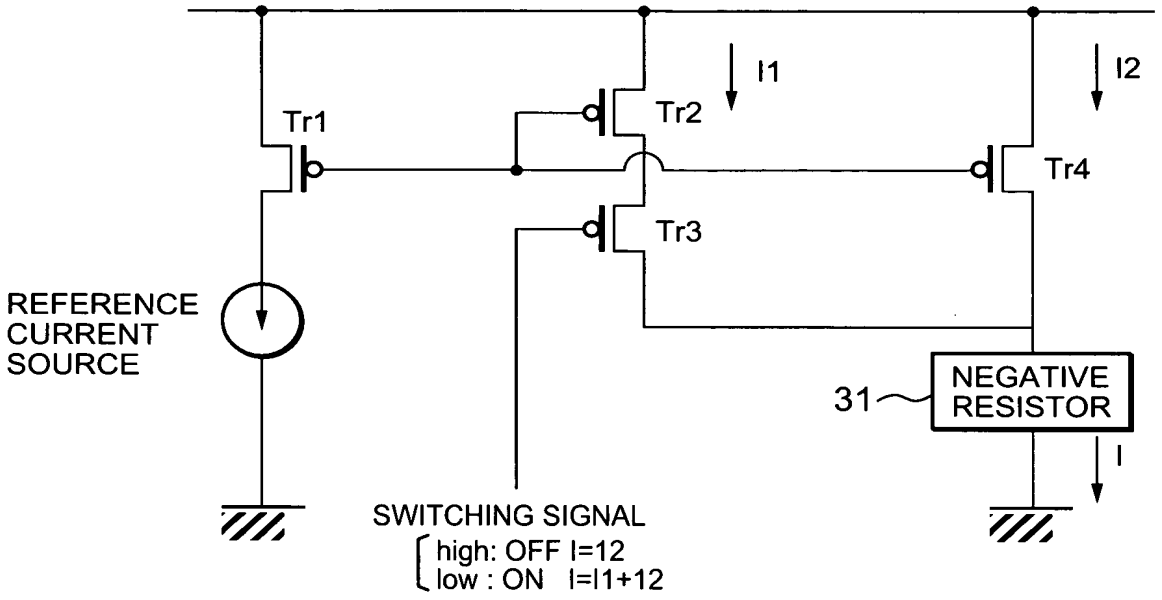
I1
I2
Tr1
Tr2
Tr3
Tr4
REFERENCE CURRENT SOURCE
31
NEGATIVE RESISTOR
I
SWITCHING SIGNAL
high: OFF I=12
low : ON I=I1+12

Fig. 7

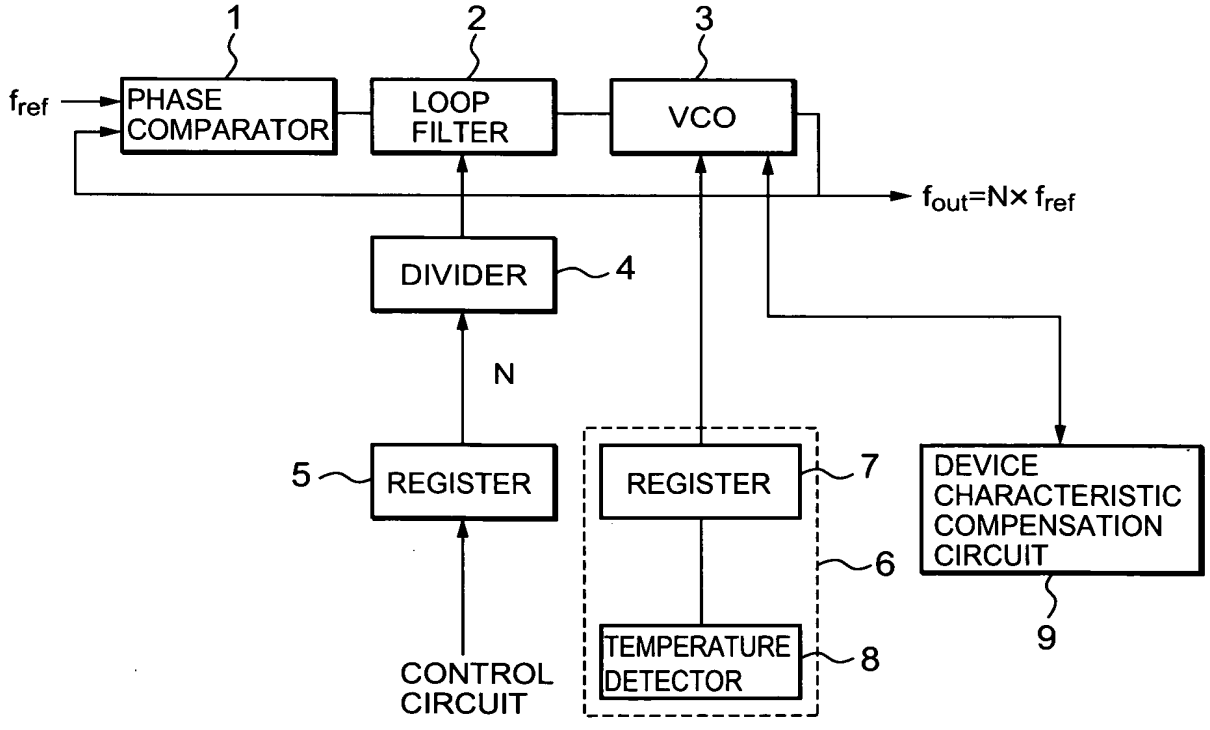
1
2
3
f_{ref}
PHASE COMPARATOR
LOOP FILTER
VCO
$f_{out}=N\times f_{ref}$
DIVIDER
4
N
5
REGISTER
REGISTER
7
6
TEMPERATURE DETECTOR
8
DEVICE CHARACTERISTIC COMPENSATION CIRCUIT
9
CONTROL CIRCUIT

Fig. 8

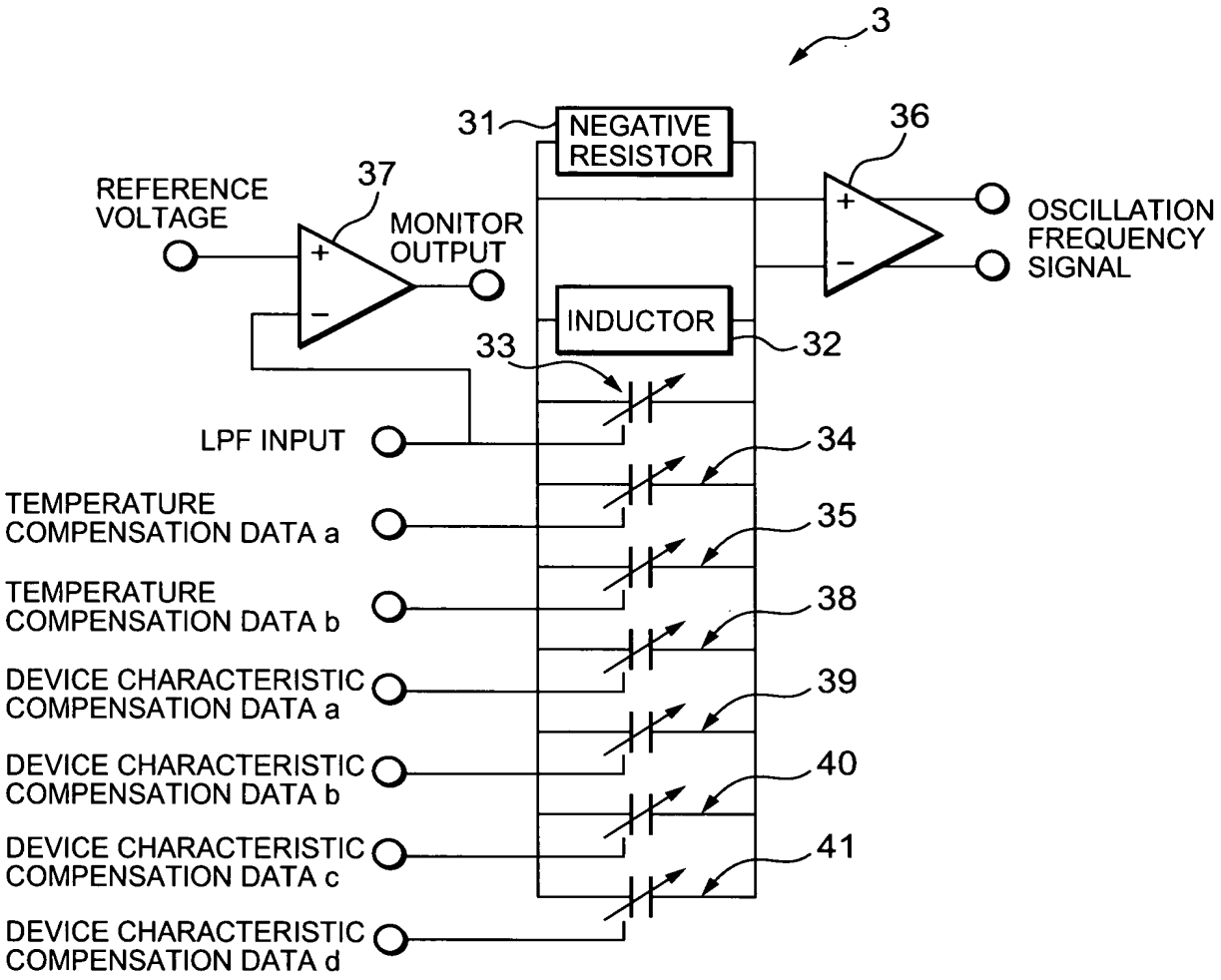

Fig. 9

COMPOSITE CAPACITANCE OF DEVICE CHARACTERISTIC COMPENSATING CAPACITORS	OSCILLATION FREQUENCY (MHz)	AMOUNT OF SHIFT IN OSCILLATION FREQUENCY (MHz)
0	2354	-126
1*Cl	2369	-111
2*Cl	2384	-90
4*Cl	2415	-65
8*Cl	2480	0
9*Cl	2497	17
10*Cl	2514	34
12*Cl	2540	69

Fig. 10

COMPOSITE CAPACITANCE VALUE(*C1)	TRIAL VALUE (INITIAL VALUE)	RESPONSE	TRIAL VALUE (SECOND TIME)	RESPONSE	TRIAL VALUE (THIRD TIME)	RESPONSE	TRIAL VALUE (FOURTH TIME)	RESPONSE	FINAL VALUE
0	(1000)	0	(0100)	0	(0010)	0	(0001)	0	(0000)
2	(1000)	0	(0100)	0	(0010)	0	(0001)	1	(0001)
3	(1000)	0	(0100)	0	(0001)	1	(0011)	0	(0010)
4	(1000)	0	(0100)	0	(0010)	1	(0011)	1	(0011)
5	(1000)	0	(0100)	1	(0110)	0	(0101)	0	(0100)
6	(1000)	0	(0100)	1	(0110)	0	(0101)	1	(0101)
7	(1000)	0	(0100)	1	(0110)	1	(0111)	0	(0110)
8	(1000)	0	(0100)	1	(0110)	1	(0111)	1	(0111)
9	(1000)	1	(1100)	0	(1010)	0	(1001)	0	(1000)
10	(1000)	1	(1100)	0	(1010)	0	(1001)	1	(1001)
11	(1000)	1	(1100)	0	(1010)	1	(1011)	0	(1010)
12	(1000)	1	(1100)	0	(1010)	1	(1011)	1	(1011)
13	(1000)	1	(1100)	1	(1110)	0	(1101)	0	(1100)
14	(1000)	1	(1100)	1	(1110)	0	(1101)	1	(1101)
15	(1000)	1	(1100)	1	(1110)	1	(1111)	0	(1110)
16	(1000)	1	(1100)	1	(1110)	1	(1111)	1	(1111)

Fig. 11

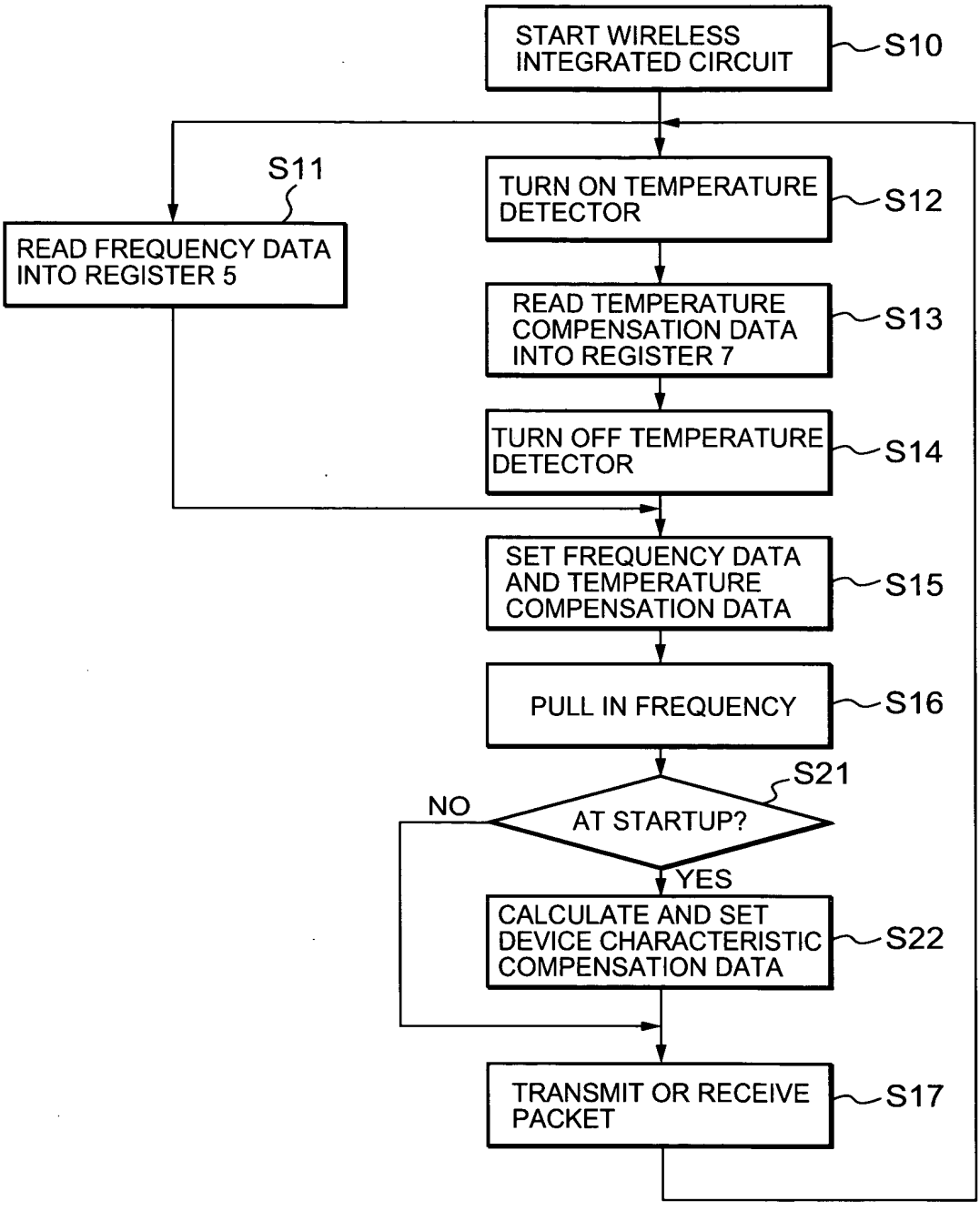
START WIRELESS INTEGRATED CIRCUIT
S10
S11
READ FREQUENCY DATA INTO REGISTER 5
TURN ON TEMPERATURE DETECTOR
S12
READ TEMPERATURE COMPENSATION DATA INTO REGISTER 7
S13
TURN OFF TEMPERATURE DETECTOR
S14
SET FREQUENCY DATA AND TEMPERATURE COMPENSATION DATA
S15
PULL IN FREQUENCY
S16
S21
NO
AT STARTUP?
YES
CALCULATE AND SET DEVICE CHARACTERISTIC COMPENSATION DATA
S22
TRANSMIT OR RECEIVE PACKET
S17

Fig. 12

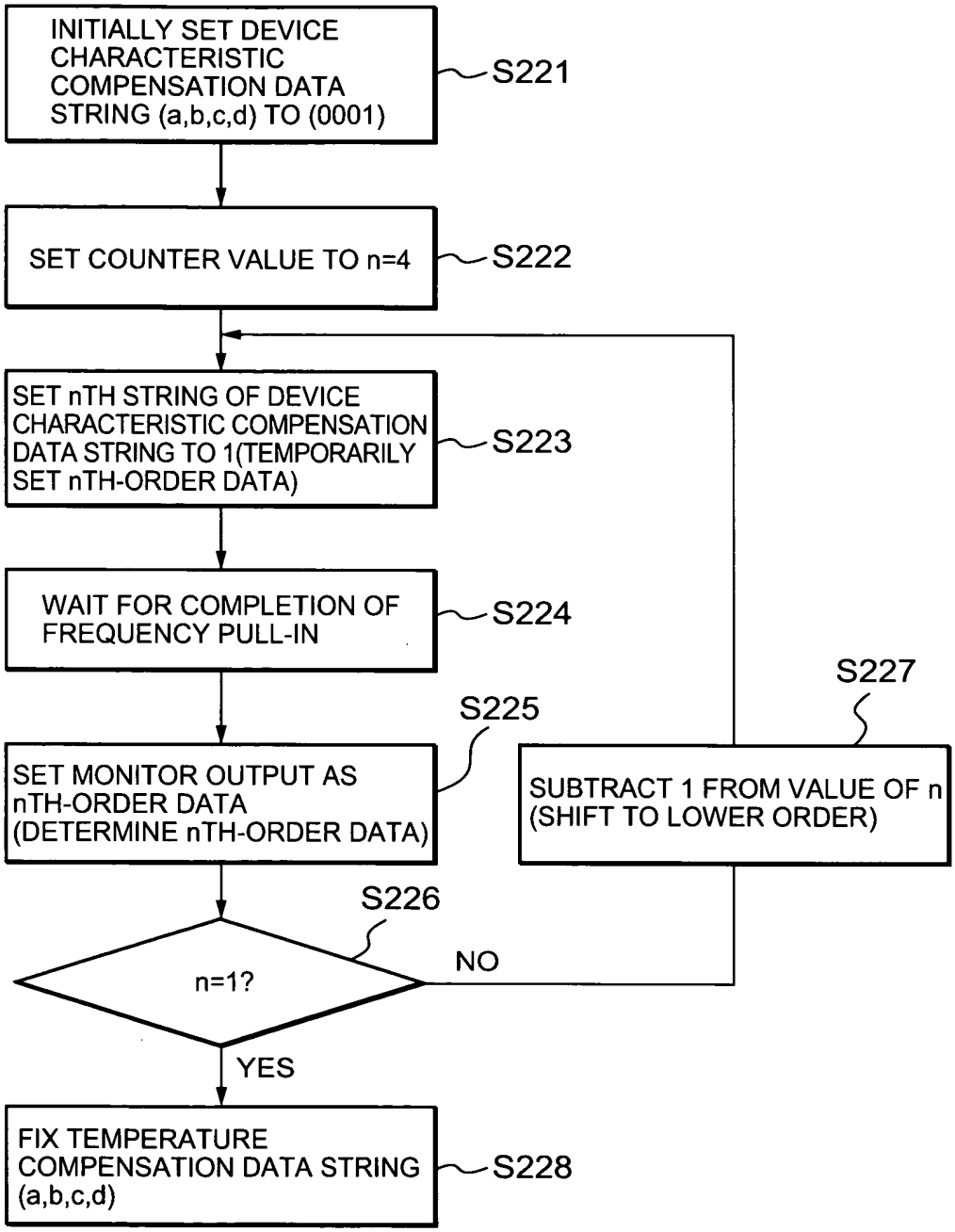
INITIALLY SET DEVICE CHARACTERISTIC COMPENSATION DATA STRING (a,b,c,d) TO (0001)
S221
SET COUNTER VALUE TO n=4
S222
SET nTH STRING OF DEVICE CHARACTERISTIC COMPENSATION DATA STRING TO 1(TEMPORARILY SET nTH-ORDER DATA)
S223
WAIT FOR COMPLETION OF FREQUENCY PULL-IN
S224
S225
SET MONITOR OUTPUT AS nTH-ORDER DATA (DETERMINE nTH-ORDER DATA)
S227
SUBTRACT 1 FROM VALUE OF n (SHIFT TO LOWER ORDER)
S226
n=1?
NO
YES
FIX TEMPERATURE COMPENSATION DATA STRING (a,b,c,d)
S228

Fig. 13